## REMARKS

Claims 10-14 and 31-34 have been examined. Claims 19-30 and 35 have been canceled, without prejudice, pursuant to a restriction requirement. Claims 36-38 have been added. Reconsideration of the claims, as amended, is respectfully requested.

Claim Rejections – 35 USC 102

Claims 10, 13 and 14 have been rejected under 35 U.S.C. 102(b) as being anticipated by Humberstone. This rejection is respectfully traversed in part and overcome in part.

As now amended, independent claim 10 recites a vibratable aperture plate that comprises a plate body having a top surface, a bottom surface, and a plurality of apertures extending from the top surface to the bottom surface. Further, each aperture is defined by a generally conical cavity which extends from the bottom surface toward the top surface and a dome shaped cavity that extends from the top surface toward the bottom surface. The dome shaped cavity and the conical cavity have the same axis of symmetry.

As recited in the application, this particular configuration allows the exit opening at the top surface to be flared or angled to increase droplet production rates when the aperture plate is vibrated. See, for example, page 11, lines 3-22.

In contrast to the aperture plate of claim 10, the Humberstone patent fails to describe such a configuration of apertures. Hence, it is respectfully requested that the section 102 rejection of claims 10, 13 and 14 in view of Humberstone be withdrawn.

Claim Rejections – 35 USC 103

Claim 11 has been rejected under 35 USC 103(e) as being unpatentable over Humberstone. Claim 11 depends from claim 10 which, as described above, is distinguishable over Humberstone. Further, applicant respectfully disagrees that it would have been obvious to use palladium in view of the teachings of Humberstone. Therefore, it is respectfully requested that this rejection be withdrawn.

Claim 12 is rejected under 35 USC 103(e) as being unpatentable over Humberstone in view of Hindman. Claim 12 depends from claim 10 which, as described above, is distinguishable over Humberstone. Further, applicant respectfully disagrees that one of skill in the art would have used the dome shaped spray nozzle of Hindman with the aerosolizer of Humberstone; namely, the spray nozzle of Hindman does not vibrate to produce liquid droplets, but is merely a spray nozzle that does not vibrate. Hence, one of skill in the art would have no motivation to use this shape with the vibrating aperture plate of Humberstone. Therefore, it is respectfully requested that this rejection be withdrawn.

Claims 31-34 have been rejected under 35 USC 103(a) as being unpatentable over Humberstone in view of East. This rejection is respectfully traversed.

As pending, claim 31 claims an aperture plate that comprises a plate body having a top surface, a bottom surface, and a plurality of apertures extending from the top surface to the bottom surface. The apertures each include an upper portion and a lower portion, with the lower portion extending upwardly from the bottom surface and being generally concave in geometry. The upper portion is tapered in a direction from the top surface to the bottom surface and intersections with the lower portion.

As recognized by the office action, Humberstone fails to teach the shape of the apertures, and instead relies upon the East reference to teach such a limitation. Applicants respectfully disagree that one of skill in the art would be motivated to combine the teachings of East with Humberstone. More specifically, the Humberstone device – somewhat similar to the aperture plate of claim 31 – uses a vibrational mode to eject liquid droplets. In contrast, the East reference describes a nozzle that is used with compressed liquids that are forced though the nozzle without vibrating the nozzle. There is simply no teaching or suggestion for using such a nozzle as an aperture in a vibrating aperture plate. Hence, for at least this reason, the section 103 rejection of claims 31-34 is improper.

Further, with East, the high pressure liquids are introduced into a convex section 12 and then out through a concave section 16 as with a traditional nozzle. In contrast, with the aperture plate of claim 31, liquids are placed into contact with the convex portion and are then moved though the conical portion where they are ejected. See, for example, page 10, lines 18-

25. Hence, for this additional reason, one of skill in the art would have no motivation to use the nozzle design of East with that of Humberstone to construct the aperture plate of claim 31. Therefore, it is respectfully requested that the second 103 rejection of claims 31-34 be withdrawn.

Added Claims

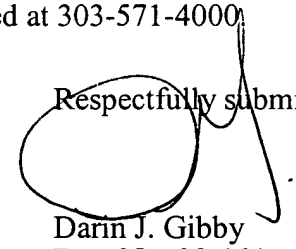
Claims 36-38 have been added to depend from claim 10. Since claim 10 is in condition for allowance, claims 36-38 are allowable for depending from claim 10.

## CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,



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